

REMARKS

Claims 1 and 4-13 stand rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,253,458 (Christian) in view of DE 2823064A (Whitten). Applicant traverses the Section 103(a) rejection based on the PTO's assertion that:

- Christian teaches simulated logs (containing variations in diameter) made of polyvinyl chloride thermoplastic,
- Christian fails to teach that the thermoplastic is polypropylene,
- Whitten teaches imitation/simulated tree parts which is made of various materials including polypropylene, and, thus,
- It would be obvious to a person of ordinary skill in the art at the time of the invention to substitute polypropylene for the PVC disclosed in Christian.

Applicant submits that case for obviousness proposed by the PTO falls short of a *prima facie* case for obviousness. That is, Applicant submits that Christian, whether alone or in combination with Whitten, fails to teach or suggest the claimed subject matter. The differences between the plastic logs of the claimed invention and the prior art include diameter deviation and material of construction. More specifically, the deficiencies of Christian include failing teach or suggest (a) variations in diameter in a single log or (b) changes in both log morphology and in materials of construction are not supplemented by Whitten.

With regard to a failure to teach or suggest variations in diameter, a fair reading of Christian discloses various round or square tubular-shaped logs, each of which has a substantially uniform surface dimension (diameter) over its length except at apertures for receiving bolts. For instance, Christian states that the basic component of his invention comprises sections of polyvinyl chloride (PVC) tubing which may be precast with a simulated external log design to include knots, cracks and wood grain. Absent any amplification by Christian on its meaning, a person of ordinary skill in the art, knowing how tubing is made, would understand the "precast with simulated external log design" to mean a decorated surface, e.g. a painted surface. In the figures of Christian the logs are shown to be uniform so as to permit being stacked to provide a building structure with durable and reliable construction.

Moreover, a person of ordinary skill in the art would recognize the need for uniformity in the logs of Christian and understand that the logs disclosed by Christian logs would not have any diameter deviation let alone a deviation in the range of 2 to 60% as illustrated in Figure 1 of Applicant's specification. Such diameter deviation is a critical element in the logs of applicant's invention in that it provides a surface analogous to natural wood used in posts and rail fencing, not merely a superficial simulated surface. Without such diameter deviation plastic logs would appear to be like the uniform extruded pipe used in the Christian logs. While such uniform tubing as disclosed by Christian could be used in fencing, a person of ordinary skill in the art with any concept for aesthetics beyond art deco simply would not think of using such uniform tubing as a substitute for wood post and rail fencing or of modifying the Christian logs for post and rail fencing. There is not any teaching or suggestion in Christian that would motivate such modifications for diameter deviations.

With regard to change in log morphology, the Christian logs have a unique morphology provided by the shell/core structure optionally reinforced by I-beams. With reference to the Figures of Christian, it appears the thermoplastic PVC is less than 20% of the log volume and the hard cast foam is more than 80% of the log volume except, perhaps, when the core also comprises an I-beam. Christian does not define hard cast foam, but a person of ordinary skill in the art could believe it to be something other than thermoplastic. There is no suggestion in Christian to substitute the composite morphology of a shell/core structure with an extruded morphology provided in a plastic log comprising at least 80% thermoplastic materials. Moreover, a person of ordinary skill in the art would not be motivated by Christian to substitute the composite morphology which is apparently important for the building construction contemplated by Christian for a simple morphology which is useful in post and rail fencing made of at least 80% thermoplastics.

With regard to change in materials of construction, the thermoplastic in the Christian logs is PVC. As previously argued by Applicant, PVC is known to have a low flexural modulus, e.g. not more than 10,000 psi. Thus, Christian achieves rigidity by filling the PVC pipe with a hard foam core or optionally an I-beam. There is no suggestion or motivation in Christian to use thermoplastics with a higher flexural

modulus, e.g. of at least 70,000 psi. Similarly, there is no suggestion in Christian to substitute polypropylene or polyethylene for any of the diverse materials of construction used by Christian to achieve the desired utility. The composite logs of Christian apparently are suited for the purpose of building stacked walls of bolted logs. Thus, Christian provides no motivation to substitute a more expensive thermoplastic plastic material for the inexpensive PVC.

The deficiencies of Christian in failing to teach or suggest the plastic logs of this invention having a diameter deviation and a unique material of construction are not supplemented by Whitten which discloses decorative model trees having a wire skeleton supporting a sleeve trunk which is coated with a texture material to simulate a natural tree bark. The texture coating can be sisal, coconut, animal hair, cotton, wool, nylon and polypropylene among other materials. Clearly the texture materials suggested by Whitten are in the nature of fluff to be adhered to a substrate. Thus, the mere listing of polypropylene as one of many materials for simulating bark on the sleeve does not teach or suggest any modification of Christian for (a) diameter deviation in a log comprising (b) at least 80% thermoplastic materials comprising at least one polyolefin (polyethylene or polypropylene). Even if, for the sake of argument, a person of ordinary skill in the art was motivated to substitute a material in Christian with one listed by Whitten, the mere change of PVC for polypropylene would not provide a log with at least 80% thermoplastic because the PVC content of the Christian logs is, apparently, less than 20% of the volume of the logs.

Absent hindsight reconstruction of the Christian logs using Applicant's specification as a template, there is no way a person of ordinary skill in the art would be motivated to make the wholesale changes from the Christian specification to arrive at the unique logs claimed by Applicant. Such changes could not be made without some motivation to change the utility of the Christian logs from wall building materials to a utility as a post and rail fence. Such motivation simply does not exist in Christian or Whitten. Post and rail fencing is unique in that relatively thin diameter extrusions (about 2 inches in nominal diameter) are required to span relatively long distances (about 8 to 10 feet) without sagging. The Christian logs are either supported over their length by the lower logs in the stack or reinforced by an I-beam when spans are contemplated. The

Whitten trees comprise an erect standing truck with various types of simulated bark. Neither Christian nor Whitten contemplate structural post and rail fencing that has diameter deviations to simulate natural wood. Neither contemplates a material of construction that would be useful for achieving such a log. Neither suggests a modification of the other to achieve such a log.

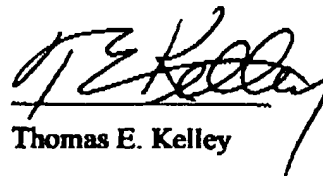
The above comments should satisfy the three step factual inquiry for nonobviousness as set forth by the U.S. Supreme Court in Graham v. John Deere by showing that a person of ordinary skill in the art would not find Applicant's invention obvious in view of the differences between the invention and the prior art. In Graham the Supreme Court also enunciated other indicia of nonobviousness, e.g. commercial success, long-felt but unsolved needs, and failure of others, that might be used to marshal and examine facts for probative value on the matter of obviousness. In this regard, Applicant refers the PTO's attention to an article from the Pocono Record, Sunday April 10, 2005, [attached hereto as Exhibit A] reporting on the claimed subject matter and the success of the inventor in developing plastic logs for post and rail fencing (which meet the criteria of the pending rejected claims). The article reports that sales have been made to the United States Department of Agriculture and to a National Park which are organizations noted for purchasing on performance not hype, i.e. commercial success is not premised on marketing. The article also notes that there are some 31 companies making decking out of scrap plastic mixed with sawdust. A review of plastic decking at any local hardware store should provide proof of the existence of at least several of the 31 companies. The reason for the high number of companies making decking from recycled plastic is simplicity and ease in achieving performance. There is a dearth of plastic post and rail fencing. An internet query of vinyl plastic post and rail fencing will show material made from hollow vinyl (PVC) extrusions. But, Applicant is not aware of any other manufacturer in the United States making plastic logs for post and rail fencing from recycled plastic, let alone from polyolefins such as polyethylene and/or polypropylene, and submits that the facts support non-obviousness. That is, it is not obvious what materials of construction will permit recycled plastics to be used in making plastic logs useful for post and rail fencing. Nor is it obvious that how to achieve an appearance in extruded plastic that will emulate natural wood. The fact that plastic logs meeting the

criteria of the claims are not ubiquitous like decking is probative evidence that it is not obvious how to craft a suitable plastic log from plastic. These secondary considerations buttress the primary consideration that a person of ordinary skill in the art would be motivated to modify the materials of Christian and/or Whitten only by hindsight reconstruction using Applicant's specification as a blueprint which is impermissible in assessing obviousness. The fact that the disclosures of Christian and Whitten are devoid of the any relevant suggestion or motivation belies obviousness.

The Examiner is urged to visit www.closetheoop.com for a view of plastic logs of this invention.

Reconsideration and withdrawal of the Section 103 rejection is respectfully requested. In view of the above remarks Applicant respectfully submits that the pending claims 1 and 4-13 as amended are patentable over the cited art and request reconsideration and withdrawal of the rejections and allowance of claims. Applicant's attorney welcomes an interview to expedite prosecution of this application.

Respectfully submitted,



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Exhibit A

Pocono Record, Sunday April 10, 2005

Article by News and Business Editor Susan Koomar

"I've got just two words for you: Recycled Plastics"

**reporting sales of plastic logs for post and rail fencing by inventor Patrick Kelley to
United States Department of Agriculture in Maryland and Arches National Park in Utah**

POCONO RECORD
SUNDAY
 April 10, 2005

News & Business Editor Susan Koomar

I've got just two words for you: Recycled plastics

W. End entrepreneur envisions a future in wood-grain fencing

By **SUSAN KOOMAR**
 News and Business Editor

Pat Kelley's product is unique, but his strategy for building a small business isn't.

Kelley, founder of Waste Not Technologies in Saylorsburg, recycles plastics into fence posts and rails molded and colored to look like wood.

It took the soft-spoken, bespeckled chemical engineer 10 years to develop the process, which he hopes to have patented. He built a spare, metal building off Kunkletown Road to manufacture the fencing, which is sold through a Kresgeville-based Internet business called Close the Loop.

Kelley met Close the Loop owner Rita Lacey at the West End Fair.

"It's a good match because she's good at selling it and I'm good at making it," said Kelley.

Lacey said there's nothing like the product anywhere else in the United States.

"It's solid recycled plastic that looks like real wood. It's beautiful, lasts a lifetime and was invented locally," she said.

They talked with volunteer counselor Mac Walker of the Service Corps of Retired Executives (SCORE) for advice on



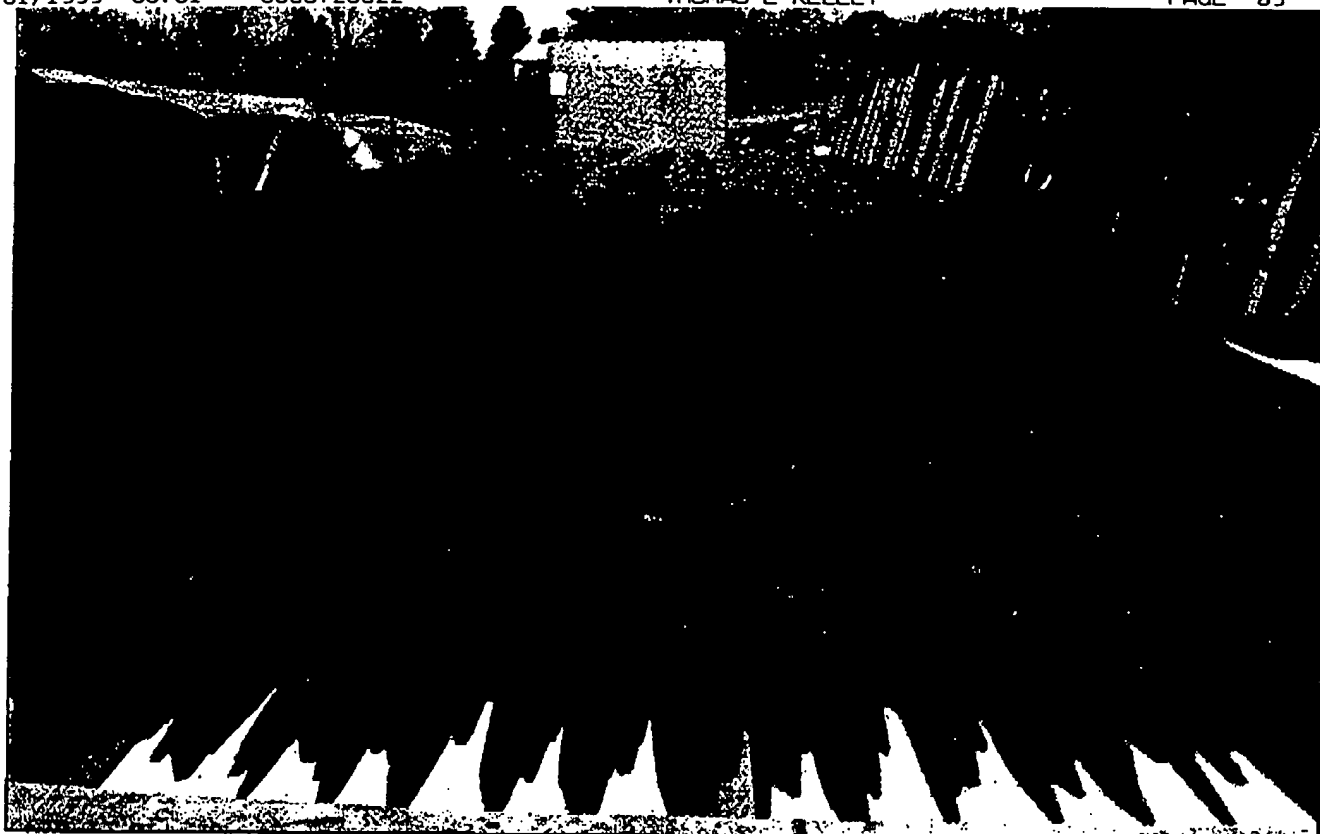
DAVID KIDWELL / Pocono Record



Above: Ground plastic is melted and molded into fence rails and posts. The Department of Agriculture and the National Park Service are interested in using the maintenance-free fences.

Left: Waste Not Technologies uses plastic from Bethlehem candy maker Just Born, Bergen Polymer in Gilbert and the Monroe County Municipal Waste Authority.

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Fence rails with the look of wood are made of recycled plastic at Pat Kelley's Waste Not Technologies in Saylorsburg.

DAVID KIDWELL / Pocono Record

PLASTIC

From Page E1

a business plan.

SCORE, which has a Monroe County chapter, will host a seminar on Wednesday, April 20, for entrepreneurs who want to start a business.

Kelley has won a state grant for up to \$250,000 for additional machinery and will get a small business loan through the Northeast Pennsylvania Alliance to expand.

He urged fellow startups to seek out local resources.

"You have to find them. They don't know you exist. Networking is very critical," said Kelley.

He praised the state for its commitment to helping fledgling companies — and promoting recycling.

"People should know the state is involved in things like this," said Kelley. "They've been emphasizing collection (of recyclables) for years, but there weren't a whole lot of people making products."

in the process of filling an order for 2,000 feet of fencing for the U.S. Department of Agriculture in Maryland.

The durable but natural-looking fencing has even been used in Arches National Park in Utah. Kelley is working on a special order for the park, where managers want a lighter-colored version to blend in with the Southwestern landscape.

Big and little

Kelley spent 16 years in plastics fabrication with Mobil Chemical Corp. He has a bachelor's degree in chemical engineering from Worcester Polytechnic Institute and an MBA from Rutgers University. He teaches at Northampton Community College.

Kelley found it difficult to advance new ideas at a large company.

"For most of my life I was interested in trying to do something on my own," he said. "In a big corporation, you're trying to get your ideas through, and it's a big mill."

"It took a lot of tinkering," said Kelley as he pulled out an early unsuccessful attempt at making plastic look like wood.

"This is just horrible. It's rough. It's ugly," he said of the prototype with awkward bumps instead of the realistic wood grain on the current version.

"About two years ago I got a pretty good-looking product," said Kelley, who has since been busy shifting from research mode into production.

Kelley is seeking investors, but wants to maintain control of the business and keep it local. He expects to start hiring employees this fall and may eventually move the company to one of two business parks being developed in Coolbaugh Township.

"We should probably be in an industrial park where we would have much more room," he said.

Shredded and molded

Kelley takes garbage such as empty plastic containers from candy-maker Just Born in

fine shavings. He also gets plastic refuse from Bergen Polymer in Gilbert and the Monroe County Municipal Waste Authority.

The shavings go into a machine, where they are melted, colored and formed into texturized "logs."

Sales have huge potential to grow based on the expanding popularity of recycled plastics made into lumber for decks, said Kelley.

"There are now 31 companies making decking out of scrap plastic mixed with sawdust," he said. "We see this as a niche of that. As those businesses have grown we see the potential for this to grow."

As Waste Not Technologies expands, so does recycling, said Kelley.

"We're going to save more plastics from going to landfills and put it into a useful product," he said.

Fencing made by Waste Not Technologies costs \$7.01 per linear foot for a two-rail fence, \$9.65 per linear rail fence. For information, call 610-860-1111 or visit www.closestheoop.com

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